

DATATRIEVE-11 is a data maintenance, inquiry language, and report writing system. It is available on IAS, RSTS/E, RSX-11M, RSX-11M-PLUS and VAX/VMS operating systems for PDP-11 computers, and in compatibility mode for VAX family computers. It provides users with direct, easy, and fast access to the data in sequential, indexed, and relative RMS files. DATATRIEVE-11 accepts English-word commands and statements from the user and reacts by extracting, modifying, or updating the RMS data. After learning fewer than ten commands, the novice user can find, print, update, and sort records.

By eliminating the need for many specialized application programs and their time-consuming compilations, DATATRIEVE-11 helps to maximize programmer and system productivity. And because it is so easy to learn and simple to use, DATATRIEVE-11 enables "non-DP" users to access data bases without the services of a programmer.

HIGHLIGHTS

- Fast, easy access to RMS files
- English word commands, rather than confusing acronyms, that are easy to learn and master
- Simple and advanced command forms
- Users can tailor requests interactively to meet specific needs
- Immediate error notification for on-line correction
- Facility for storage of frequently accessed command sequences
- Data Definition Facility
- Inquiry, updating, and report generating facilities
- Extensive user control of report formats
- Maintains file security



DESCRIPTION

DATATRIEVE-11 is a self-contained interactive query language that enables users to store, access, update, and report information contained in RMS-11/RMS-11K files and RMS-32 files for VAX systems. The product contains substantial end user "help" facilities to insure that even the unsophisticated user can take advantage of its capabilities.

Although application programs can do everything DATATRIEVE does, there are many advantages to using DATATRIEVE over application programs for ad hoc queries and report generation. The three major categories of DATATRIEVE-11 capabilities are:

- Data Access and Update Facilities
- Report Generation Facilities
- Data Definition Facilities

Data Access and Update Facilities

The inquiry and update commands provided by DATATRIEVE-11 enable the user to perform varied forms of record and file manipulation. All DATATRIEVE-11 commands can be thought of in two categories: simple and advanced. The simple commands enable the novice, knowing as few as ten commands, to find, update, and sort records. The more experienced user can use the advanced commands to perform more complex functions such as combining commands to form procedures.

DATATRIEVE provides the less sophisticated user with flexible "value-based" data access/update capabilities that can eliminate the need for programming overhead in many "ad hoc" situations. Information is returned to the user in the form of collections of records which can be manipulated and/or displayed on the terminal or printer using the DATATRIEVE report writing facility. Several specific features bring this power to both the novice and sophisticated user.

- GUIDE MODE is a tutorial aid with automatic prompting. It is available on VT52 and VT100 terminals. This feature permits the novice to retrieve and display data by stepping through a subset of commands in their simplest form
- The documentation set for DATATRIEVE includes a Beginner's Primer designed to introduce the novice to the use of DATATRIEVE, and a revamped user's guide that uses examples to present the various DATATRIEVE functions
- Because the commands are English words, rather than confusing acronyms, they are easy to learn and master. The commands also use English-like syntax
- DATATRIEVE supports simple arrays
- A data type is provided that recognizes date formats and facilities, entering and displaying dates in any one of several formats
- DATATRIEVE provides a full set of arithmetic operators (addition, subtraction, multiplication, division, and negation), a set of statistical operators (total, average, maximum, minimum, and count), and provides conversion between data types used in the FORTRAN, COBOL, DIBOL, and BASIC-PLUS-2 languages

Data Protection

The protection of data within DATATRIEVE-11 is accomplished through two independent mechanisms: the protection systems of the host operating system and those within DATATRIEVE-11. The DATATRIEVE-11 protection system uses passwords and User Identification Codes (UICs) to allow a user to regulate access to domains, records, procedures, and tables through access requirements recorded with the definitions in the Data Definition Facility. Thus, each resource has its own security system, which assures that access is not granted to unauthorized users.

Report Generation

In addition to its inquiry and update commands, DATATRIEVE-11 provides a report writing facility to generate reports from RMS files. The data to be used in the report may come directly from the RMS files or may be preselected and manipulated through a series of DATATRIEVE-11 commands. The report facility allows the user to specify such parameters as spacing, titles, headings, and totals on their reports. As in the inquiry and update facility, errors in commands are discovered immediately so the user can correct the commands before printing wrong or incomplete reports.

Data Definition Facility

The Data Definition Facility maintains definitions of record structures and domain names. A record structure describes the format of the records in the file. A domain is a named group of data containing records of a single type. Record structures and domain names must be defined before DATATRIEVE-11 can be used to access RMS files.

These definitions provide a substantial level of data/program independence because the record definitions (or views) can actually cross RMS file boundaries. Simply by providing a single value-based DATATRIEVE query, users can access information from multiple files and records. DATATRIEVE-11 also provides commands to list the contents of the Data Definition Facility, to delete entries, and to control access to individual entries in the Data Definition Facility.

Application Design Tool

DATATRIEVE provides an Application Design Tool (ADT) to help the novice user quickly and efficiently create domain and record definitions. The ADT uses an interactive dialogue technique to walk the user through the definition process using familiar "non-DP" terminology. This process results in an indirect command file which is used to actually create definitions in the DATATRIEVE Data Definition Facility.

View Facility

Using the DATATRIEVE-11 "view" capability the user can define logical records that cross RMS file boundaries. These views definitions are stored in the Data Definition Facility and are used by DATATRIEVE to provide a relational data access capability that is similar to the newest "relational" data managements system.

Procedures

The Data Definition Facility can also be used to save procedures. A procedure is a group of frequently used statements or commands. By storing procedures in the Data Definition Facility, a user can execute sequences of commands by calling the procedure name, rather than entering an entire sequence manually. Procedures can be defined by a user for personal use, or can be made available to all users. Defining system-wide procedures not only saves typing, but also provides a means to establish and distribute complicated sequences of commands to all users. Procedures can be edited within DATATRIEVE-11, allowing rapid application development.

Data Input Validation

DATATRIEVE provides data encoding/decoding and input validation capabilities through tables stored in the Data Definition Facility. Validation criteria can also be stored in the record definition to verify the accuracy of input. DATATRIEVE will automatically reprompt during data entry if an input error is detected.

Inquiry and Update

The inquiry and update commands provided by DATATRIEVE-11 enable the user to perform varied forms of record and file manipulation. DATATRIEVE-11 offers simple and advanced commands. This means that a novice, knowing as few as ten commands, can find, update, print, and sort records, while the experienced user can use advanced commands to perform more complex functions.

Commands

The DATATRIEVE-11 commands give users the power to access, update, sort, manipulate, and change RMS records to access any RMS file. A user first gives a READY command. This command informs the system that a certain domain will be referenced and, optionally, how it will be used.

DATATRIEVE-11's inquiry and update facility includes a PRINT command to provide a printout of the specified record contents. The user can request to see one or more fields in either a single record or a group of records.

In addition, DATATRIEVE-11 includes a HELP command that provides a summary of each command.

Data Manipulation Commands

An assortment of commands are provided to manipulate the data in collections. The SORT command rearranges the order of records in a collection. Records can be sorted by one or more key data fields in ascending or descending order. In sorting by more than one field, DATATRIEVE-11 sorts all records in the collection by the first field specified, then sorts for the second field within categories of the first field, and so on.

The ability to change data is one of DATATRIEVE-11's most powerful capabilities. The MODIFY command changes the data field(s) in any given record or all the records in a collection. DATATRIEVE-11 allows the user to modify any number of fields, and will prompt for new values. Using the STORE and ERASE commands, records can be added and removed from RMS files as well.

Advanced Commands

DATATRIEVE-11 also offers advanced commands that allow a user to combine commands to make them more powerful. Advanced commands can be used to group simple commands into a single compound statement, join commands or statements so that execution of the second statement immediately follows the first, and provide a choice of actions that may be followed based on existing conditions. These advanced commands are useful to designers of procedures and to experienced DATATRIEVE-11 users.

OPERATING ENVIRONMENT

DATATRIEVE-11 is supported on any valid PDP-11 system configuration running IAS Version 3, RSTS/E Version 7, RSX-11M Version 3.2, RSX-11M-PLUS Version 1, or VAX/VMS Version 2 that includes a minimum of 64 kilobytes of user memory and the Extended Instruction Set.



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